DOCUMENT RESUME

ED 195 718 CE 027 257

AUTHOR DeLucca, Kenneth Peter
TITLE Safety Concepts for Pre-Student Teachers in Industrial Arts. A Research Paper.
INSTITUTION Wisconsin Univ. - Stout, Menomonie. Graduate Coll.
PUB DATE Jul 79
NOTE 74p.: Not available in paper copy due to light, broken print.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Accident Prevention: Attitudes: *Autoinstructional Aids: Behavioral Objectives: Educational Research: *Industrial Arts: Industrial Arts Teachers: Laboratory Safety: Learning Activities: *Legal Responsibility: Literature Reviews: Material Development: *Preservice Teacher Education: Safety: *Safety Education: School Shops: Secondary Education: Surveys: Teacher Education Curriculum: Teacher Responsibility: *Teaching Methods: Tests: Vocational Education
IDENTIFIERS *Negligence

ABSTRACT

This paper describes the development of a self-instructional package to be used in a pre-student teaching class in safety instruction for industrial educators. The resource itself is contained in the body of the report. The narrative provides the review of literature undertaken and analysis of the data from a survey/questionnaire mailed to sixteen field professionals who chose the five (of twenty-one) most important items of concern in safety education topics for pre-student teachers in industrial arts. The thirty-seven-page self-instructional package contains information relating to teacher liability and safety attitudes--the two major concerns in the field of industrial arts as identified by survey respondents at the present time. Each of the two parts contains informative materials, learning activities based on them, and activity answer keys. Optional activities may be provided. Final evaluations (with answers) for each part are given. (Appendixes include list of survey participants, cover letter, and questionnaire.) (YLB)

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SAFETY CONCEPTS FOR PRE-STUDENT TEACHERS IN INDUSTRIAL ARTS

by

Kenneth Peter De Lucca

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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A Research Paper

Submitted to Complete the

Plan B Requirements for

190-735

Problems in Industrial Education

Lee A. Smalley

Investigation Advisor

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The Graduate College
University of Wisconsin-Stout

July, 1979

ACKNOWLEDGEMENTS

This writer is grateful for all the encouragement and assistance of Dr. Lee H. Smalley and his family during my graduate studies at the University of Wisconsin-Stout. This research effort is dedicated to my Mother.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
Chapter	
1. INTRODUCTION.	1
Statement of the Problem.	3
Method of Research.	3
Limitations of the Study.	5
Definitions	6
2. REVIEW OF LITERATURE.	7
Summary	12
3. ANALYSIS OF DATA.	14
Safety Education Programs	17
Possible Use.	17
Delineation	18
Analysis of Data - Literature	19
Summary	19
4. SAFETY CONCEPTS FOR PRE-STUDENT TEACHERS IN INDUSTRIAL ARTS	20
5. SUMMARY, CONCLUSIONS, RECOMMENDATIONS	58
FOOTNOTES.	60
BIBLIOGRAPHY	64
APPENDIX	66

Chapter 1

INTRODUCTION

With safety being a concern of employers and employees in industry, educators must also place safety in the industrial arts laboratory as one of their first objectives. As Kigin, in his book on teacher liability states, "The possibility of a public school teacher being involved in a legal action resulting from a school related injury is greater today than in any period in educational history".[1]

Browning, in a presentation to the American Vocational Association annual convention of 1978 sited three reasons for educators to comply to safe industrial practices. The first being a moral obligation to their students, second, economic reasons, and legal implications as the third reason for safety in laboratories.[2]

With Public Law 94-142, special needs students are now part of our industrial arts student population. Many of these students have only a slight concept of power equipment and/or its use. We may take for granted that our regular students will not pick up a piece of red hot metal, but can we say the same for someone who has never seen metal heated by an arc welder?

At present time, there are vast amounts of information dealing with safety in industrial arts. The most common form this information is available to educators is in books such as the Accident Prevention Manual for Training Programs[3], edited by Merle E. Strong.

This 1975 "Yearbook" of the National Association of Industrial and Technical Teacher Educators goes into great depth in dealing with the problems of safety in the laboratory. Data from the National Safety Council show the need for safety in terms of the number of industrial accidents and cost of such accidents in human suffering as well as the economics of a hospital stay and lost hours on the job. Articles in professional journals such as Man/Society/Technology (American Industrial Arts Association), VocEd (American Vocational Association), as well as privately operated magazines as School Shop and Industrial Education all help to keep the teaching professional up to date with periodic articles. These articles range from eye safety to a checklist for safe procedures to the basic facts of the Occupational Safety and Health Administration.

But what about the pre-student teacher? With an already crowded curriculum in education courses, can time be spent covering the 1975 Safety Yearbook, or to completely cover the book by Kigin dealing with the lone aspects of teacher liability?

Today in education we are becoming aware of many different modes of delivery of information t students. Out of these many systems, perhaps the self-instructional package could be utilized effectively to convey safety awareness to pre-student teachers. The instructor of such a pre-student teaching class would only need a minimum amount of in-service training dealing with the use of such a package. Class time, which is at a premium, is kept to a point so that only a limited amount of time would be needed to introduce and explain the usefulness and mechanics of such a package.

With these traits incorporated into such a learning aid, it is believed that instructors who teach a pre-student teaching class could and would use such a safety self-instructional package.

Statement of the Problem

The objective of this paper is to develop a resource that can be used in a pre-student teaching class for safety instruction of industrial educators. It appears that a self-instructional package, dealing with a single aspect of safety education could be readily included in such a pre-student teaching type of class.

Method of Research

Before a package for safety education could be developed, the content of such a package must be verified. To do this, the Industrial Teacher Education Directory[4], compiled by Ervin A. Dennis, was utilized to determine the fourteen institutions that graduated the largest number of students at the baccalaureate level in industrial arts. By including the fourteen largest institutions of this type, a wide geographic area could be drawn upon as a survey population. In addition to these fourteen institutions, two individuals were added to the survey population. The input of these two members of the profession, it is hoped, would greatly enhance the verification of the content of the self-instructional package. The American Industrial Arts Association Safety Committee chairperson was asked to participate as was the editor of the Accident Prevention Manual for Training Programs[5], Dr. Merle E. Strong.

These members of the profession were contacted by mail which included a letter of introduction listing the goal of this project and requesting the assistance of a member of the department that instructs

a pre-student teaching course. Once that individual was identified, a questionnaire of twenty-one items was presented from which to choose the five most important items of concern in safety education topics for pre-student teachers in industrial arts. Using this method, it is hoped that the largest single concern for safety in the field of industrial arts could be identified. The five top items are rank ordered so the single most important item could be identified. There is also open space so members of the survey population could add items that they felt were omitted.

With the hope of gaining as much information as possible on this topic of safety education, requested was a brief description of the safety program (if any), for undergraduate students in industrial arts. Comments about the use of such a self-instructional package or the need for safety education could also be added at this time. A self addressed stamped envelope was included along with a request for prompt attention to this matter was added to speed up the return process.

Due to the limitation of time, a followup letter was not sent. One reason for not sending such a followup letter was to observe the response rate for such a request as the development of such a safety package. If the topic is of importance to educators, perhaps some individuals will act quickly and conscientiously. An item of importance would draw near a 100% return rate with no followup letter. On the other hand, if the professor feels the topic is of little or no concern, the response rate would be lower and persons responding will make comments to that effect.

Limitations of the Study

Limitations of the package will be the knowledge and background of the survey population. Bias on a particular item could influence the choice of what appears to be the major concern of safety education for educators. One other known limitation is that the developed package will not be field tested. The package itself will not be used by an instructor of a pre-student teaching class. From such use, there will usually be some revisions of the first draft of such a package. It is the hope of this author to supply the package to the American Industrial Arts Association Safety Committee and perhaps have this field testing completed to ensure usability.

It is important at this time to note that this self-instructional package is not meant to be as comprehensive as other materials on the subject. Instead, its purpose is to discover where the pre-student teacher population is at with regard to safety education and to review for them a key topic of concern.

DEFINITIONS

Self-Instructional Package: Educational materials from which students focus attention on a limited amount of material at one time and requires a response to each segment of material.[6]

Field Professional: Professionals from the 16 institutions that graduate the largest number of undergraduates in industrial arts education.

Pre-Student Teaching Class: A class devoted to the teaching aspect of industrial arts education

OSHA: Refers to the Occupational Safety and Health Act of 1970 passed by Congress "...to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources."[7]

Chapter 2

REVIEW OF LITERATURE

Presently in the field of industrial arts, there are a number of different sources from which safety information could be obtained. Of these different sources, perhaps the most common source is the textbook. For the reason of availability, among others, the instructor of a pre-student teaching class can rely on any number of books, written by professionals in the field. These books cover information from motivation to evaluation, from instructional aids to lesson plans. Many of the current textbooks used in pre-student teaching classes may or may not include an adequate chapter on industrial safety. For example, in Dr. Donald A. Maley's book, The Industrial Arts Teachers Handbook-Techniques, Principles, and Methods[8], only two paragraphs relate directly to safety in the laboratory or in a demonstration. However, Dr. Ronald J. Baird in Contempory Industrial Teaching-Solving Everyday Problems[9], includes one entire chapter on the concepts of safety and first aid. Safety in attitude to teacher liability is covered for the pre-student teacher in this textbook among other topics of safety. Instructors must be aware that depending on the text used in a pre-student teaching course, if the class does not include resources other than book material, the students in such a class may not receive needed safety education.

In addition to textbooks, from time to time a professional organization may develop a safety yearbook. This was done by the

National Association of Industrial Teacher Educators in 1963. Edited by William A. Williams, Accident Prevention Manual for Shop Teachers[10], is probably one of the first attempts for the safety education of shop teachers on a national level. Revised in 1975, the Accident Prevention Manual for Training Programs[11], edited by Merle E. Strong probes in depth safety concerns for educators as did the 1963 yearbook. As one can well imagine, an entire course could be developed from either or both of these books to fully cover safety education for industrial educators.

Safety instruction for industrial educators can also be obtained from the major content area disciplines, woods, metals, plastics, etc. A common textbook used in graphic arts for industrial arts teacher education is by Darvey E. Carlsen[12]. In this text, safety concerns are limited to the power driven platen press, paper cutters, and offset presses. The major concern is to keep fingers, wiping clothes and/or sponges out of the area of the rollers or cutter.

Another popular industrial education textbook is called, Industrial Plastics[13], by Ronald J. Baird. Industrial Plastics explores various areas of the plastic industry, from basic chemistry to processes used to form or shape plastics. A number of laboratory experiments are shown, however, safety concerns as to extreme temperature and pressures are not generally emphasized. Where John R. Walker in two of his textbooks Exploring Power Technology[14] and Modern Metalworking[15] devotes one entire chapter on safety rules in the laboratory, Baird leaves this type of instruction up to the instructor of the class. It is noted here that all the textbooks mentioned above can be found in industrial arts training programs for educators but none make mention

of the term teacher liability. Instead safety rules in each specific laboratory may or may not be included to varying degrees.

Periodic professional journals also publish articles on various safety topics. These articles may update a previous article, or may cover new trends in safety education. One such article can be found in the Man/Society/Technology, the professional journal of the American Industrial Arts Association. Included in the January, 1977 issue is the article by William H. McPherson, "OSHA, a Moral Responsibility"[16]. This and other articles alerted the profession of OSHA and the need for safety education of students as well as employees in industry. One must remember that articles of this type are only periodical in nature, many months may pass before the next safety article is published.

Included in the sources of how pre-students teachers might gain safety information is from a booklet type of instruction. Making Safety Work[17], by the National Safety Council, discusses the importance of safety and ways to prevent accidents at home, in school, and in business and industry. With plenty of graphics and pictures, the right and wrong methods are shown as well as written about. Developed for the junior high or high school audience, this booklet covers general safety such as housekeeping practices and the like.

Another booklet type of safety education is Developing Shop Safety Skills[18]. Again, written for the high school student in laboratory classes, or for persons employed in industry, this booklet is an excellent reference for persons who desire to become skilled in the safe use of tools and equipment. Making Safety Work and Developing Shop Safety Skills are quite useful guides for students to become exposed to during an industrial arts type of class. They are made to be

very interesting to the student by using many graphics as well as emphasizing key or important words. It is important to remember that these above two works are for students use. We will now look at booklets developed for industrial educators and the topic of safety education.

Performance-based teacher education (PBTE)[19] materials were developed by the National Center for Research in Vocational Education of Columbus, Ohio. Published by the American Association for Vocational Instructional Materials (as was Developing Shop Safety Skills), modules E-5 and E-6 provides for student safety and first aid needs of students respectively. These two modules were developed by key program staff from the Center for Vocational Education at the Ohio State University. Each module is an instructional package designed to cover a single teaching skill. In the case of module E-5, a safety program is developed with the following topics: I. Knowledge of the techniques and procedures for providing for student safety needs (attitudes, equipment, personal protective equipment and other such topics), II. Development of a safety handbook based on applicable local, state and federal laws, III. Simulated classroom situations (critique case situations), and lastly, IV. Actual School situations (working as a teacher or student teacher) and evaluate the teachers accomplishment during a lesson or demonstration.

Module E-6 is based on the first aid needs of students. In the same basic format as module E-5, the learner will demonstrate knowledge of first aid in case situations as well as in an actual school situation if indeed the learner can be functioning in an actual school system.

The modules represent an outstanding contribution to the field of profesional teacher education. The package format provides information, activities, and feedback devices to help the teacher acquire the particular skill. However, a number of topics are included, from a strong safety attitude and its development to a teacher performance assessment form to evaluate one's safety skill during a demonstration. The self-instructional device requires active participation of the student and provides immediate knowledge of his/her accuracy. Armsey and Dahl in their book, An Inquiry Into the Uses of Instructional Technology[20], comments upon "...the necessity of tailoring instruction to fit a particular instructional environment". This "tailoring instruction" must also include the content of such a package as well as its instructional format.

Some factors that have made the adoption of self-instructional packages desirable is the information explosion and the accelerated technology demand[21]. More efficient educational methodologies are needed to meet the above needs as well as the demand for greater teacher accountability. This type of instruction has been proven by research to be at least as effective by teaching at least as much as other methods, and in less time[22].

The self-instructional package provides for "individual differences" and gives equal educational opportunity for more students[23]. This is achieved by being flexible for the teacher as well as the student. Slower students are not forced to move on to prematurely new material while faster students can proceed at an advanced rate. The teacher does not watch over the students shoulder, but is available as needed to answer questions or provide encouragement.

A key ingredient of the self-instructional package is active student participation, learning by doing replaces passive reading of a textbook or listening to a teacher. Students focus attention on a limited amount of material at one time, and requires a response to each segment of material.[24] Make up lessons and review sessions are accomplished with minimum effort.

Summary

Safety education for pre-student teachers can not rely solely upon the current textbooks found in the field of industrial arts. Where one book stresses safety education, another may only vaguely touch the topic. In like way, professional journals such as Man/Society/Technology (AIAA) do present articles on this topic, but only on a periodic basis. There may be many months between articles dealing in safety education, so this source of information is also not adequate.

Manuals, developed by national organizations present a great deal of indepth data on the subject of safety. However, one entire course could evolve around these "Yearbooks". Already overcrowded curriculums in a pre-student teaching class prohibit use of such an extensive volume.

Current textbooks in use in the field of industrial arts for specific areas (woods, metals, etc.) may or may not contain safety education for the student. Where one textbook includes one entire chapter on the safety concerns in the laboratory, others only point out hazards particular to that area. None of the textbooks reviewed included a section on teacher liability.

A booklet format, that zeroes in on important topics of safety education are persent in the literature, but many are developed for the junior high or high school laboratory student.

Packages, developed for performance-based teacher education seem to utilize a different mode of delivery quite effectively. That of a self-instructional package. The self-instructional package has proven to be as effective as other methods of learning, plus, it provides for individual differences of the students. Student participation is used to replace the passive learning of reading or listening. The student only has to be concerned with a limited amount of material at one time. However, these performance-based packages branch out and touch upon many topics in the area of safety and does not cover one selected topic indepth.

Chapter 3

ANALYSIS OF DATA

Survey

Of the sixteen questionnaires (letter of introduction, the survey, and list of field professionals asked to participate can be found in Appendix A) sent out, a total of ten, or a return rate of 62.5% was obtained. Two of the ten respondents did not fill out the survey for the following reasons: 1) One respondent felt that the Performance-Based Teacher Education (PBTE) Materials[25] would adequately fill the need of safety education for industrial educators. The respondent listed competencies E-5, Provide for Student Safety, and E-6, Provide for First Aid Needs of Students as the necessary safety education for pre-student teachers. These materials were reviewed, and are listed in Chapter 2, Review of Literature. 2) In favor of developing materials for safety education, this respondent believes that safety as a whole must be covered, not just a few topics. An example was sited to show a resource that did not concentrate on one lone topic, but covered the entire concept of industrial education safety. The Accident Prevention Manual for Training Programs[26], edited by Merle E. Strong, was the sited reference by this respondent to show that safety education must be complete, from safety consciousness to evaluation of the laboratory. How can one rate the five most important topics in safety education, they are all important. For this reason, the respondent declined to assist in this project.

The remaining eight respondents (50.0%) did rate the five most important safety topics in industrial arts and four respondents included information about their safety program and/or the usefulness of such a self-instructional package.

Table I shows the number of responses for each item listed in the questionnaire as well as four other items added by the respondents. The item that had the single most number of responses was item number four - Teacher Liability. Each of the eight respondents listed teacher liability as one of the five most important safety concerns in industrial arts. Of almost equal importance is item number five - Safety Attitudes. A total of seven respondents listed safety attitudes as one of the five most important safety concerns in industrial arts. It appears that these two items, teacher liability and safety attitudes is of major concern to the profession at this time.

The response rate then declines to four responses for item number two - Safety Inspections. It is noted here that items four and five, teacher liability and safety attitudes, received eight and seven responses respectively. The next closest topic of concern is safety inspections with only four responses.

Item seven - Physical Elements (equipment) and nine - Accident Causing Conditions each had three responses. Item one - Checklists, item ten - Accident Prevention, item twelve - Instructional Improvement, and item thirteen - Safety in Demonstrations received two responses each. The following items received one response each: First Aid, Laboratory Improvement, Accident Reporting and Analysis, Personal Protection and Special Needs Students. Each of the following items were listed by the respondents under the heading of Other Topics of

Table I

ITEM	RESPONSES
1. Checklists	2
2. Safety Inspections	4
3. Safety Agencies	-
4. Teacher Liability	8
5. Safety Attitudes	7
6. First Aid	1
7. Physical Elements (equipment)	3
8. Industrial Safety	-
9. Accident Causing Conditions	3
10. Accident Prevention	2
11. Laboratory Improvement	1
12. Instructional Improvement	2
13. Safety in Demonstrations	2
14. Safety Tests for Students	-
15. Accident Reporting and Analysis	1
16. Role of Supervisor, Principal, etc.	-
17. Housekeeping Practices	-
18. Fire Safety	-
19. Personal Protection	1
20. Special Needs Students	1
21. Lesson Plan on Safety	-

Filled in responses (one response each):

Adequate Insurance Coverage - Teacher, Industrial State Safety Code, Drugs and Drug Abuse, and Operational Safety Program.

Concern, and received one response each: Adequate Insurance Coverage - Teacher, Drugs and Drug Abuse, Industrial State Safety Code, and an Operational Safety Program. The remaining items, Safety Agencies, Industrial Safety, Safety Tests for Students, Role of Supervisor, Principal, etc., Housekeeping Proctices, Fire Safety and a Lesson Plan on Safety received no responses.

Safety Education Programs

Of the four respondents who reacted to the question at the end of the survey, it was found that two institutions had no formal program on safety education for the pre-student teachers except for one elective course in Industrial Safety. These students would get safety instruction, if any, from individual instructors within courses in the major field of industrial arts. One respondent did not react to this part of the questionnaire except to state the program of study is aimed at post-secondary educators, and would not address itself to industrial arts. The last respondent to this section of the survey stated that there is one elective course (taught by an OSHA Certified Compliance Instructor) called, "OSHA Safety Compliance." The same institution also requires that a course in Red Cross approved First Aid is taken by educators prior to student teaching. This institution was found to be the most stringent with regard to safety education of their pre-student teachers, to require a certified First Aid course before a student may enter a school system to student teach.

Possible Use

Two of the four respondents stated that they would be interested in a self-instructional package with the possibility of including such a resource into their curriculum for pre-student teachers in industrial arts.

Delineation

Sixteen questions were distributed that included a letter of introduction as well as the survey itself. Ten individuals returned the questionnaire and/or assistance to aid this researcher. This was a response rate of 62.5%. A total of eight individuals responded to the survey which was one half of the survey population, or 50.0%. The eight respondents identified two major concerns of safety education for pre-student teachers. Eight of the respondents (100%) listed teacher liability as the primary safety concern in the field of industrial arts at the present time. Seven of the eight respondents (87.5%) listed safety attitudes as the second most important concern in safety education. The remaining topics ranged from four responses (50.0%) for one item, to no responses for seven items.

From these results, a self-instructional safety package that includes components of teacher liability and safety attitudes would indeed fill a need as identified by the field professionals.

Four respondents reacted to the section of the questionnaire that deals with current safety programs in progress at their institutions. Two respondents stated there were no formal required safety classes for pre-student teachers in industrial arts. These institutions did however mention that there is a elective course in Industrial Safety. One respondent stated that their educational program is directed toward post-secondary educators, thus industrial arts is not a component of their instruction. The last respondent stated there is one elective course in OSHA safety, but pointed out that their program requires all pre-student teachers to attend a class in Red Cross approved First Aid. This is, by far, the most stringent requirement found in this survey

for pre-student teachers by this researcher.

Two respondents made comments that such a safety package would be useful, and in its self-instructional format, could and would be incorporated into their program for training industrial educators.

Analysis of Data - Literature

Much of the contents of the self-instructional safety package was developed from references sited in Chapter 2 - Review of Literature. The bibliography is a complete listing of resources that supplied information on teacher liability and safety attitudes. A great deal of information was yielded from the Accident Prevention Manual for Training Programs.[27] Chapter 2 "Developing Safety Consciousness" by Norman Pendered, and Chapter 12 "Shop Teacher Liabilities", by Denis Kigin and Al Sherick supplied a thorough discussion on the topics. This information was then compared to other written material for completeness, and finally, this information was synthesized into the self-instructional package.

Summary

From the previous comments, it appears that such a self-instuctional package would fill a definite need by supplying awareness level information on teacher liability and safety attitudes to pre-student teachers in industrial arts. It could also be used to assess just where pre-student teachers are at with regard to safety education.

Chapter 4

SAFETY CONCEPTS FOR PRE-STUDENT TEACHERS IN INDUSTRIAL ARTS

Prepared by

KENNETH PETER De LUCCA

University of Wisconsin-Stout
July, 1979

INTRODUCTION

Contained in this self-instructional package is information relating to teacher liability and safety attitudes. Safety education is a very important part of industrial arts because of the many chances for accidents in the laboratory. Part A of this package covers teacher liability, Part B, safety attitudes. These two topics, it is hoped, will be most beneficial for pre-student teachers and prepare you for your first experience as a teacher in the field of industrial arts.

The hope of this author is that YOU will practice the following safety attitudes as you teach, and protect yourself from any possible legal problems you might encounter during your teaching career.

Kenneth Peter DeLucca
July, 1979

turn to page 3

DEFINITIONS

Attitudes	The way you feel about certain concepts, ideas, practices or events.
Liability	A person's legal responsibility to other people.
Negligence	The failure to do something which a reasonable person guided by those considerations which ordinarily regulate human affairs do, or the doing of something which a reasonable and prudent person would not do.

turn to page 4

BEHAVIORAL OBJECTIVES

or

UPON COMPLETION OF THIS SELF-INSTRUCTIONAL PACKAGE,

1. You will become familiar of teacher liabilities for industrial educators, and without any references score 100% on a Final Evaluation for this section of the package.
2. You will become familiar with safety attitudes for industrial educators, and without any references score 100% on a Final Evaluation for this section of the package.

Do you feel at the present time you are able to achieve the two objectives of this self-instructional package?

turn to page 5

YES - Great! You can save yourself some time by turning first to page 31 and then to page 32 to complete the Final Evaluation for Objectives 1 and 2 respectively.

NO - Don't feel bad! Stick with me through this self-instructional package and find out just how easy and important learning about safety education can be. Turn to page 6 and begin.

MAY BE - I'll bet that you had some previous experience with teacher liability or safety attitudes, but still feel that you are not the expert that you would like to be. If you feel you can pass only one of the two objectives, take the Final Evaluation of the topic you feel most confident in, and do completely the package that relates to the topic you are weak in.

Objective 1. Starts on page 6, Final Evaluation page 31.

Objective 2. Starts on page 20, Final Evaluation page 32.

NOTE: This package is designed to make you aware of two topics of safety education for industrial educators. References will be listed at the close of the package in case you wish to have more information on certain sections of this package. If you do not fully understand a topic or perhaps want to learn more about a topic either:

a) Obtain and read a selected reference, or

b) Contact your instructor for assistance.

Objective 1

You will become familiar of teacher liabilities for industrial educators, and without any references score at least 100% on a Final Evaluation for this section of the package.

turn to page 7

TEACHER LIABILITY

As industrial educators, you accept a degree of liability to your students. Liability basically designates a person's legal responsibility to other people. In the case of a teacher, many states provide for you to stand "in loco parentis" (in place of the parent) and are personally liable for acts of negligence while performing your duties as a teacher. One must remember that teacher liability varies from state to state. In some states, the school board or school district is held responsible for judgments against a teacher. In other states, the teacher is responsible and must assume costs of injuries suffered by students. For this reason, check into information concerning teacher liability in your state by talking with your supervisor or administrator. Be sure you clearly understand which party (you or the school board) is liable for any accidents with regard to a student injury. Another source of information is from the school attorney of the district. He/she can locate this information and relate it to you and answer any other questions you may have. State statutes are also a resource available to teachers to determine teacher liability. Should the statute not mention who is responsible for student injuries, teachers are legally responsible for their negligent actions and are subject to liability.

LEARNING ACTIVITY. Complete the following:

1. Teacher liability is basically ones _____

_____

2. Two parties that can be held responsible in the case of liability is the teacher or the _____

3. "In loco parentis", the teacher is standing in _____

_____

4. A primary concern of teachers in a new school district is to determine which of the two parties in a school system can be found _____

to check answers, turn to page 9.

1. Teacher liability is basically ones legal responsibility to his/her students.
2. Two parties that can be held responsible in the case of liability is the teacher or the school district or school board.
3. "In loco parentis", the teacher is standing in place of the parent.
4. A primary concern of teachers in a new school district is to determine which of the two parties in a school system can be found liable.

If you made one mistake or less, correct the error and then turn to page 10.

If you made two or more mistakes, but now understand what you did wrong, reread the preceeding pages and correct the errors, then turn to page 10.

If you do not understand why you got two or more wrong, see you instructor for assistance at this time.

A term that has been used in this package should be clearly defined before we go much further in our study of teacher liability. Negligence is the failure to do something which a reasonable person guided by those considerations which ordinarily regulate human affairs would do, or the doing of something which a reasonable and prudent person would not do. In other words, negligence is interpreted as any conduct, including acts of commission or omission, which falls below the standard of care required for the protection of students against unreasonable risk of harm. Practically all legal actions against a school district or individual teacher are based on negligence, and as you may be well aware of, these legal actions are becoming more frequent. To determine negligence, the courts try to check into the foreseeability of the accident. Could a reasonably prudent person have foreseen the harmful consequences of their act. If the plaintiff (injured student or parents) can prove negligence, the teacher or school district would be held liable. Should the teacher or school district be held liable in the case of a student accident, the defendant (teacher or school district) must take redress (to make compensation) by paying damages.

Industrial educators must be able to foresee unsafe conditions in safety devices, hand tools, power tools as well as any other laboratory equipment. Also, included is the maintenance of such equipment and being sure students use the equipment properly, safely and efficiently.

LEARNING ACTIVITY. Complete the following:

1) Practically all legal actions against a school district or individual teacher are based on _____

To check answer, turn to page 12.

2) OPTIONAL ACTIVITY

Discuss negligence and teacher liability with a school administrator or instructor. List below the item you feel is most important.

Practically all legal actions against a school district or individual teacher are based on negligence.

If you completed the sentence correctly, great, now turn to page 13.

If your answer to the above sentence was incorrect, please reread the previous material and try again, then turn to page 13.

If you are still having trouble in doing a self-instructional package, see your instructor. Not everyone learns best with a package, perhaps certain reading selections are more appropriate for your learning style.

Now that we know some of the ways in which we could be held liable in case of a student accident, lets explore a few methods to protect ourselves from liability*. From a legal viewpoint, there are two defenses that a teacher or school district can use on their behalf. A teacher or school district may be absolved of liability if the age and maturity level of a student is such that total blame can be placed on the student by knowingly doing an unsafe act. Called contributory negligence, it places the responsibility on the student, and not the teacher. The lack of experience of the student, as with a minor, the more difficult it becomes to prove contributory negligence.

The second defense from a legal standpoint is called comparative negligence. In use in a few states, both the teacher and the student are found negligent and are ruled to have contributed mutually to the accident. In this case, damages are prorated on the basis of each parties degree of guilt as determined by the court.

Personal liability insurance can be obtained to protect yourself from legal action in the event of a court case concerning a student's accident. Professional organizations provide attractive rates for their members as a service to them from insurance companies with regard to teacher liability insurance. The American Industrial Arts Association and the American Vocational Association provide this service realizing the need of their members with regard to teacher liability and student accidents.

*Examples of two case studies can be found on page 30.

LEARNING ACTIVITY. Complete the following:

1) For contributory negligence to be in effect, the teacher or school district is _____ of liability because the student it totally responsible for his or her unsafe act.

2) If both the teacher and student are found negligent, _____ _____ negligence prorates damages on the basis of each parties guilt.

3) Personal liability insurance can be obtained from two professional organizations in industrial education, they are:

a) _____

b) _____

To check answers, please turn to page 15

OPTIONAL ACTIVITY:

A case study is a record of facts collected for use in a research effort. One method for learning about teacher liabilities is to read a number of case studies to understand why a teacher was held liable, and ways to prevent being liable. Denis J. Kigin, in Teacher Liability in School - Shop Accidents, published by Prakken, includes case studies that may assist you in your study of teacher liability. Read part or all of this excellent reference.

1) For contributory negligence to be in effect, the teacher or school district is absolved of liability because the student is totally responsible for his/her unsafe action.
2) If both the teacher and student are found negligent, comparative negligence prorates damages on the basis of each parties guilt.
3) Personal liability insurance can be obtained from two professional organizations in industrial education, they are:
    a) American Industrial Arts Association
    b) American Vocational Association

If you feel you have the hang of this package so far - keep up the good work and turn to page 16.

Still having trouble? Well, keep trying, remember, this package will make you aware of two concepts of safety education, teacher liability and safety attitudes. Try to single out the important points in the material and keep these in mind. But don't give up.

An effective instructional strategy is to give students a safety test for each piece of equipment that is to be used in the laboratory. Covering the proper operation of the machine as well as safety rules, these tests can be filed in case they become needed in a legal action. It is noted here that student's habits of safety are evaluated best by observation in the laboratory, by what they do, not what they say or write on paper. Teach and practice and observe each student as to the safety concerns in the area of industrial education you are teaching in. Also, the personal example of practicing safe work habits by you the teacher will certainly be transmitted to students of your classes.

To protect yourself from negligence in the event of an accident, the following precautions will prove to be most important:

1. Never leave a lab when in session and students are working.
2. Do not permit unqualified supervision of a lab class.
3. Safety instruction is given to all students on all equipment.
4. Closely supervise students you are unsure of with regard to safety and operation of equipment.
5. Avoid allowing students to use equipment who are mentally or physically handicapped or even poorly coordinated. This is a judgment you must make if such students are assigned to your class.
6. All safety devices, guards, and other items of protective equipment are in working order and are being used at all times (yes, even by you!).
7. Do not permit students not enrolled in class to use equipment and

do not permit students to leave the laboratory to perform any activities.

Safe practices must be an integral part of the industrial arts curriculum. We, as educators must:

- Instruct - using the best safety methods available,
- Emphasize - dangers to students, and
- Review - important concerns.

With an organized laboratory, proper safety instruction, good supervision and insistence on the use of safety devices we make ourselves less vulnerable to legal responsibilities as well as peace of mind that no student was injured in our class.

turn to page 18

LEARNING ACTIVITIES. Complete the following:

1) Safe practices must be an _____ part of the industrial arts curriculum.

2) What is the best method to evaluate students safety habits with regard to laboratory useage? _____

To check answers, please turn to page 19.

OPTIONAL ACTIVITY:

Choose one of the professional journals (Man/Society/Technology - American Industrial Arts Association, VocEd - American Vocational Association, Industrial Education, or School Shop) and research the topic of safety for the past year. Read and critique two articles, then discuss them with your instructor or other class members.

1) Safe practices must be an integral part of the industrial education curriculum.

2) What is the best method to evaluate students safety habits with regard to laboratory usage? Observation

Well you did it! You finished the first section of this package. If you feel ready for it, turn to page 31 and begin the Final Evaluation for teacher liability. If you wish, you may review for it by reading over the past material, but remember, no references when doing the Final Evaluation. When you are ready, go to it! Turn to page 31.

Objective 2

You will become familiar with safety attitudes for students of industrial arts, and without any references score at least 100% on a post test for this section of the package.

turn to page 21

SAFETY ATTITUDES

Attitudes reflect the way you feel about certain concepts, ideas, practices or events. Therefore, safety attitudes are concerned with the way you feel about safety, in this case, in the industrial arts laboratory. A major concept to be aware of is that a positive safety attitude is not formed overnight, it is the result of a long, patient teaching-practice process. You can not teach safety for two days and then forget about it the rest of the year. Students must be aware that safety is a vital, required part of the content for every course you teach in industrial arts.

With technology changing at a very rapid rate so do the safety rules with regard to the technology. However, a strong safety attitude will continue and remain unaffected by technological change. A positive safety conciousness will prevail long after the student leaves school and enters the world or work. The experiences of an individual can determine his or her attitudes about something. Therefore, attitudes could be learned as skills and can be taught in much the same manner. Learned behavior, as attitudes, is dependent upon one key ingredient of the student - motivation. Motivation can be fostered in safety education as any other topic, by use of teaching techniques used by the instructor. Proper safety instructions can yield proper safety attitudes in students. Lectures, stories, discussions, films, posters and charts, demonstration and field trips about safety used throughout the year are different teaching tech-

niques for safety education. Rule-making is also useful, but other methods of persentations may develop the attitude of the student to want to work safe. This desire for safe conduct must be seen as desirable by students, and not be motivated by school grades or by personal fear.

LEARNING ACTIVITY. Complete the following:

1) List at least four different methods in which to teach safety attitudes in the laboratory.

a. _____ c. _____

b. _____ d. _____

2) The best safety education for students is to develop a strong _____ with regard to safety.

To check answers, turn to page 23

OPTIONAL ACTIVITY:

Read Chapter 4, "Developing Safety Consciousness," found in the Accident Prevention Manual for Training Programs, edited by Merle E. Strong. Discuss in class or small groups some important aspects of this chapter.

1) list at least four different methods in which to teach safety attitudes in the laboratory.

a. Lectures
b. Stories
c. Discussions
d. Films
e. Posters and Charts
f. Demonstrations
g. Field Trips
h. Model Behavior (set the safety example)

2) The best safety education for students is to develop a strong positive attitude with regard to safety.

turn to page 24

The instructor of an industrial arts class must get the students to realize that they do not know it all, accidents happen to everyone and therefore, one must be cautious at all times. The teacher must set the example by speaking and acting in accordance with the requirements of safety in the laboratory at all times. You are probably well aware of safety rules and regulations that are used in each and every laboratory.

1. Do not run in the shop.
2. Do not throw any object in the shop.
3. Report all accidents, no matter how minor, to the instructor immediately.
4. Always wear the proper eye glasses or shields as required by law and your instructor.
5. Never use a machine without the approval of your instructor.
6. Never ask to operate a piece of equipment on which you have not received instruction.
7. No horseplay in the laboratory.
8. Clean machines after use.
9. Return unused materials to their proper storage areas.
10. Do not make adjustments on machines while they are in operation.
11. Use appropriate safety devices on the machine you are operating.
12. If in doubt about procedure or the operation of any machine, check with your instructor.[28]

From the very standard general laboratory safety rules, you, the instructor, must add more specific rules that are unique to the class and laboratory you are teaching in.

Below, are some methods to develop positive safety attitudes in students:

1. Spell out rules and regulations for use of equipment.
2. Demonstrate correct procedures and point out potential dangers during instruction.
3. Check student understanding and performance during a manipulative operation.
4. Provide students with the opportunity to work safely.

The most valid feedback on the development of positive safety attitudes in students is to observe their actions in the laboratory and listening to the remarks of the students.

Remember, attitudes are contagious, if the teacher can model proper safety attitudes and practices, his or her student has a better chance to leave the course without an accident.

turn to page 26

LEARNING ACTIVITY:

Develop a list of more specific safety rules for the industrial arts laboratory of your choice. Discuss these with another student and evaluate the completness and accuracy of each rule. List the results below.

turn to page 27

You should now be ready for the Final Evaluation for this section of the package. Please turn to page 32 and begin.

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Teacher Liability:

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Examples of two case studies:

A well established and supervised safety program can be an asset to a shop teacher, as was true in this case. The plaintiff (student) filed suit as a result of the loss of fingers while working on the jointer in the wood shop. The court, in finding for the defendant, ruled the district and the teacher not liable for the injury to the pupil because the pupil had been given thorough instruction in the safe operation of the equipment and appropriate signs were posted.

A teacher's poor example was a contributing factor in the court's decision in favor of the plaintiff. The plaintiff injured a finger on his right hand while operating a power saw witnout a guard or a fence in position. Evidence presented in court substantiated the plaintiff's claim that the teacher used the saw without a guard, as did other pupils in the class. The district was held liable. Other cases bear out the fact that the school district and the teachers of shop subjects have a definite responsibility in providing guards for machines and insisting that they be in position and used whenever the machine is in operation.[29]

FINAL EVALUATION:

Teacher Liability

1) Some states provide for you, the instructor, to stand "in loco parentis", or _____

2) The foreseeability of an accident is used to determine _____

3) Name one of the two professional organizations who offer personal teacher liability insurance to their members _____

4) It is permitted for the instructor to leave a laboratory class for a few minutes while the students are working.

Circle One: TRUE FALSE

WHY?

5) Safe practices must be an _____ part of the industrial education curriculum.

6) In the case study below, answer the following questions: 1) What would you have done, and 2) Why.

In an industrial arts class of woodworking, two students asked to use the table saw. The instructor was not sure if either student received any instruction on the safe use of the machine, they claimed they did. What would you do? (You may use the back of this sheet if you need additional space.)

FINAL EVALUATION

Safety Attitudes

1) Safety attitudes can be developed in a short period of time.

Circle One: TRUE FALSE

WHY:

2) From very general safety rules, the instructor should then add more _____ rules that are unique to the class and the laboratory.

3) The instructor should _____ students actions and _____ to remarks by the students to evaluate their safety attitudes.

4) School grades, or personal fear of equipment should be used to develop proper safety habits.

Circle One: TRUE FALSE

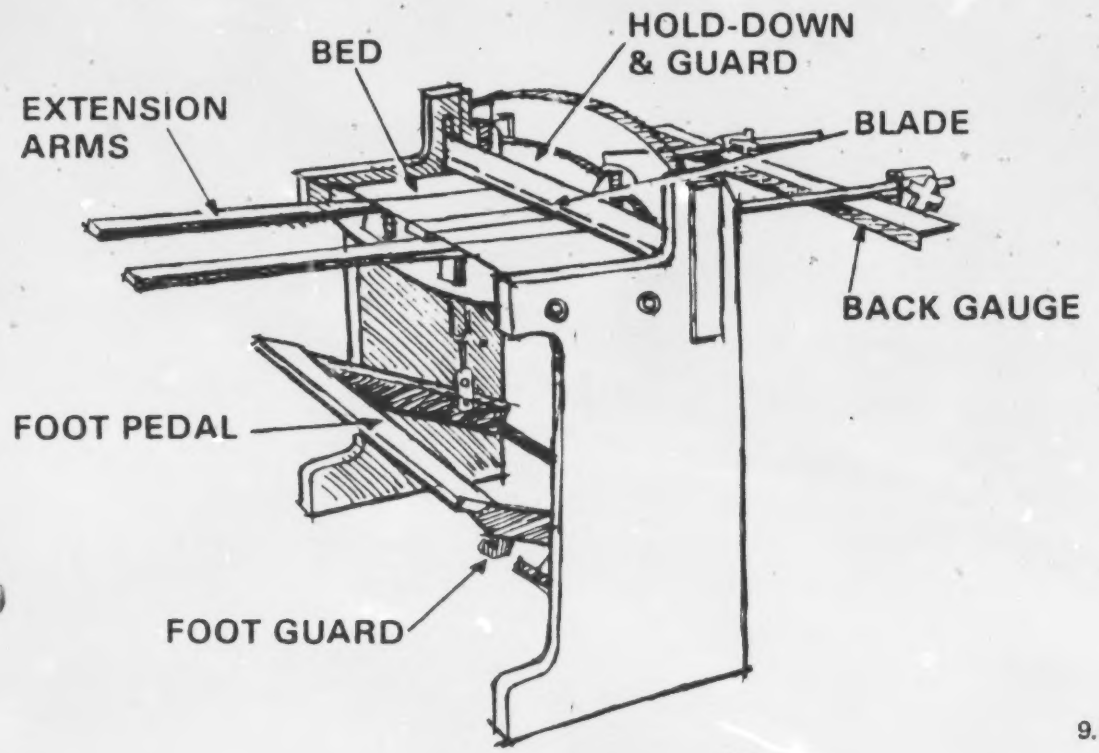
WHY:

5) The instructor should _____ proper safety attitudes and practices.

6) Develop safety sheets for two pieces of equipment in an industrial arts laboratory. Examples can be found on pages 33 to 36.

For Safety —

1. **Operate only with instructors permission and after you have received instruction.**
2. **Remove jewelry, eliminate loose clothing, and confine long hair.**
3. **Make sure all guards are in place and operating correctly.**
4. **Always use proper eye protection.**
5. Check the machine and the setup before operating. If needed, get a helper.
6. Never exceed the capacity of the machine.
7. Use gloves when handeling large pieces of sheet metal, and remove obvious burrs from all pieces.
8. Keep fingers at least 3" away from pressure bar—hold down-guard—and blade.
9. Do not atempt to catch small pieces, allow them to fall to the floor.
10. Operate only from the front of the machine.
11. Keep area under and around the machine clean and feet out from under the foot pedel.



9.58

S

Squaring Shears

Name _____

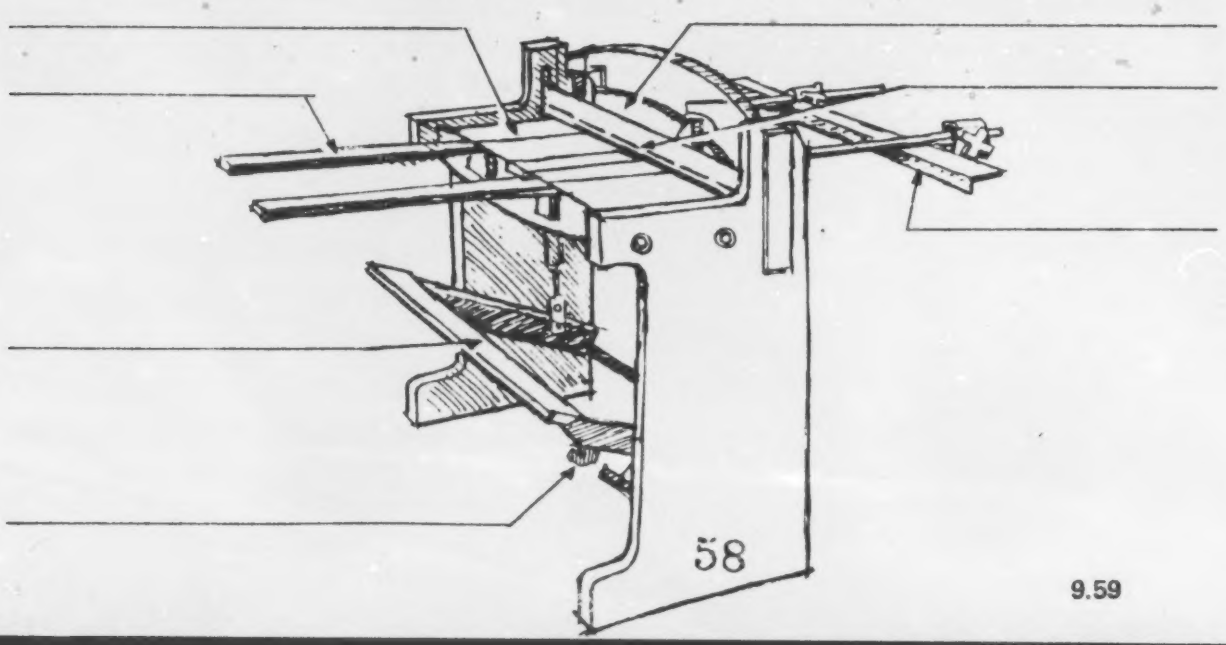
Class _____

Date _____ Grade _____

Safety Quiz

(Circle True or False)

1. Feed and operate from the treadle side of the machine only. T F
2. It is permissible to let small pieces drop into a box as they are cut. T F
3. Two students may operate the shear together. T F
4. For some projects the guard can be removed. T F
5. Gloves can be worn when operating this machine. T F
6. Eye protection is not required. T F

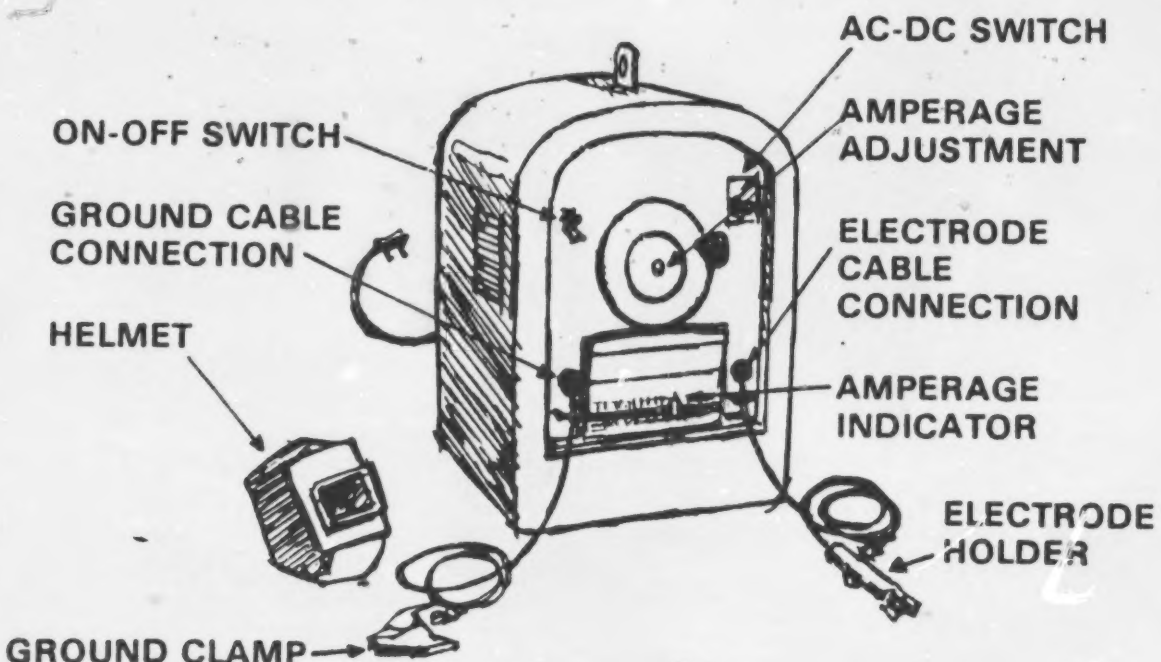


58

Arc Welder

For Safety —

1. **Operate only with instructors permission and after you have received instruction.**
2. **Remove jewelry, eliminate loose clothing, and confine long hair.**
3. **Make sure all guards are in place and operating correctly.**
4. **Always use proper eye protection.**
5. A welding helmet must be worn when welding.
6. Proper ventilation must be available.
7. Goggles must be worn when chipping slag.
8. Others in the area must be warned prior to striking an arc.
9. Gloves and proper clothing must be worn when welding.
10. Closed containers should not be welded without the instructor's permission.
11. Cables, clamps and electrode holder should be checked and working properly.
12. Screens to protect others must be in place before welding is started.



Arc Welder

S _____

Name _____

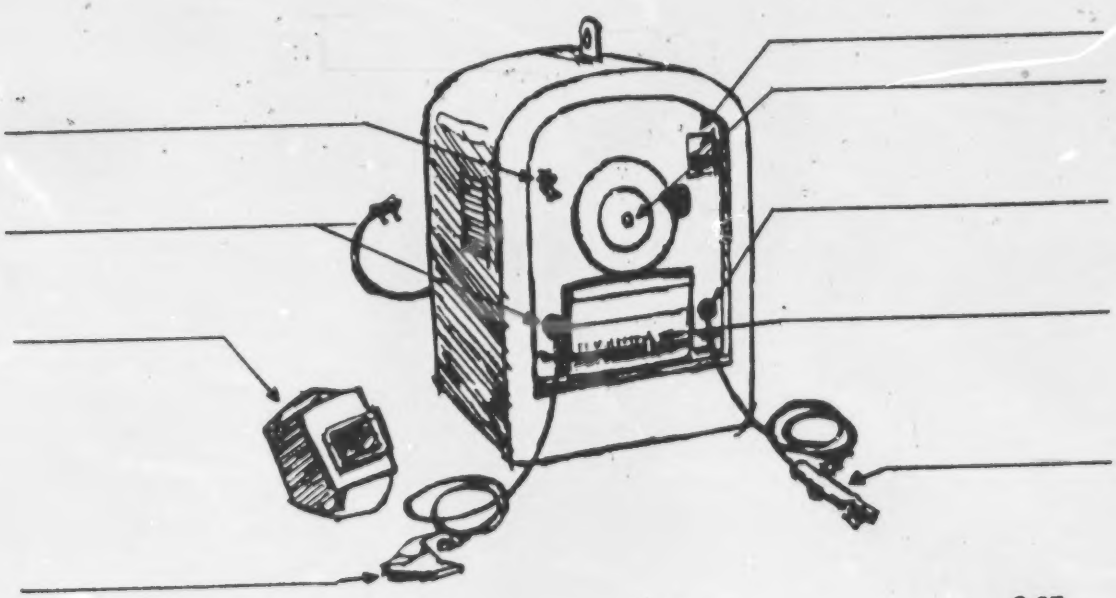
Class _____

Date _____ Grade _____

Safety Quiz

(Circle True or False)

1. You should warn anyone nearby before you start to weld. T F
2. Goggles as well as a welding hood should be available before you start to weld. T F
3. A closed container is dangerous to weld. T F
4. Gloves are not necessary when welding. T F
5. It is dangerous to weld without proper ventilation. T F
6. An electric shock is possible if both the electrode and ground are contacted. T F



(Print the correct names)

9.65

Answers to Final Evaluations

Teacher Liability:

1) in place of the parent.

2) negligence

3) American Industrial Arts Association, or
American Vocational Association

4) False. The teacher must remain in the laboratory to be sure safe practices are used by the students.

5) integral

6) The instructor must be sure each student had or will receive proper instruction on any piece of laboratory equipment. As well, the instructor should supervise the students activity to be sure the students use safe and proper operations.

Safety Attitudes:

1) False. It takes time and practice to develop attitudes in people.

2) specific

3) observe, listen

4) False. The student should want to practice safe habits without threat.

5) model

6) For evaluation hand in to instructor or one other class member.

Chapter 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary

With safety being a most important concern for industrial educators, pre-student teachers must also become aware of this increasingly important part of their curriculum. By reviewing the literature and receiving input from professionals in the field via a questionnaire, it was decided that teacher liability and safety attitudes are at present the most important concerns. It was also determined that a self-instructional package, with the benefits of not requiring a large amount of class time, as well as giving the student as much or as little time as needed to complete the work would be a most effective way to present the above safety information.

Conclusions

1. In the literature reviewed, as well as questionnaire results, safety in industrial arts is a very important concern for educators.
2. Information concerning safe practices must reach pre-student teachers.
3. One mode of delivery is the self-instructional package that covers only one or two key topics.
4. Teacher liability and safety attitudes were found to be of importance to professionals in the field, and so, became the content of this self-instructional package.

Recommendations

With the self-instructional package developed for two important concerns in industrial arts, the package now needs to be field tested. By administering the package to a few students so as to collect errors, comments, suggestions, or other data for revision.

It is recommendated that this package is presented to the American Industrial Arts Association Safety Committee and request assistance for field testing.

The development of a number of self-instructional packages that concern themselves with the many other safety topics as noted in the questionnaire might prove to be useful in the field.

With the increasing concerns in safety education in industrial arts, teacher education departments will have to examine their curriculum to be sure this information reaches their students.

Textbooks need to relate more directly to safety concerns, especially in the area of teacher liability and safety attitudes.

Further study may be needed in the area of teacher liability. Due to the legal aspects of liability, each case must be tried on its own merits. However, should any information be generalizable, it should be made available to the profession.

A review of the safety education status at present in the field. The development of a survey or test to determine what level members of the field are at with regard to safety in the industrial arts area.

FOOTNOTES

FOOTNOTES

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APPENDIX

Dr. Michael J. Adams, Chairperson
Department of Industrial Arts and Technology
State University College at Oswego
Oswego, New York 13126

Dr. Thomas C. Dean, Dean
Industrial Education Department
California State University
Long Beach, California 90840

Dr. John L. Feirer, Chairperson
Department of Industrial Education
Western Michigan University
Kalamazoo, Michigan 49008

Dr. Richard Gebhart/Mr. Richard F. Peter
Co-Chairpersons
Industrial Teacher Education Department
University of Wisconsin-Stout
Menomonie, Wisconsin 54751

Dr. Keith E. Gummere, Chairperson
Industrial Studies Department
California State University
Los Angeles, California 90032

Dr. Everett N. Israel, Chairperson
Department of Industrial Technology
Illinois State University
Normal, Illinois 61761

Dr. George B. James, Director
Industrial Technology Department
Fitchburg State College
Fitchburg, MA 01420

Dr. Daniel Lopez, Coordinator
Division of Technology
San Jose State University
San Jose, California 95192

Dr. Emerson E. Neuthardt, Acting Chairperson
Industrial Arts and Vocational Education Department
State University College at Buffalo
Buffalo, New York 14222

Dr. Robert L. Prater, Dean
Department of Industrial Education and Technology
Texas Southern University
3201 Wheeler Avenue
Houston, Texas 77004

Dr. John Y. Stoudt
American Industrial Arts Association
Safety Committee Chairperson
Norristown Area School District
1900 Eagle Drive
Norristown, Pennsylvania 19401

Dr. Merle E. Strong
Department of Educational Administration
University of Wisconsin-Madison
Madison, Wisconsin 53706

Dr. James A. Sullivan, Chairperson
Department of Vocational Education Studies
Southern Illinois University
Carbondale, Illinois 62901

Dr. Michael M. Sugarman, Director
Technical and Vocational Education
University of Akron
Akron, Ohio

Dr. James C. Warner, Chairperson
Department of Industry and Technology
Northern Illinois University
DeKalb, Illinois 60115

Dr. Welcome E. Wright, Head
Department of Industry and Technology
East Texas State University
Commerce, Texas 75428

June 12,1979

Dear

With safety being an important part of Industrial Teacher Education, I am asking for your assistance in developing a safety self-instructional package. As a graduate student, I have looked at many textbooks, pamphlets and other media to educate student teachers in safety while in industrial education laboratories. By developing such a safety package its qualities may better suit industrial education pre-student teachers in the area of safety for the benefit of all. With an already overcrowded curriculum in a pre-student teaching type of class, one cannot assign an entire book on safety, or devote two weeks to this topic. The self-instructional package, may fit into a class curriculum easily, with only a minimum amount of in-service by the instructor, plus only a short amount of time needed to introduce and evaluate the package.

I am therefore asking for your assistance in designating a member of your department involved in teaching pre-student teaching courses and will also be available during the month of July. This department member will join me in A) verifying the content of such a package, and B) reviewing the developed package. My hope is to verify the content by asking a few members of the profession to list the most important items of concern. I will then develop the package from this information, and let the same professionals react to the package. From your comments, I will then update the package as needed and forward it to the American Industrial Arts Association for futurer distribution.

Part A) verifying the content can be done on the next page. I have found 21 items in the literature of concern in industrial education safety. Please list the five most important items that need to be covered in such a package. In order to expedite this process, I am enclosing a stamped, self-addressed envelope for you to return the safety topic sheet only. My goal is to send the developed package to you by early July and receive your comments about the package at your earliest possible convenience.

Thank you for your time and cooperation in this matter.

Sincerely,

Kenneth Peter De Lucca
Box 243
Menomonie, WI 54751

SAFETY TOPICS

Please rank the items listed below in the following order:

Rank number 1 the item of most importance, number 2, the item of second most importance, and so on until you have identified the five most important items. Please feel free to add your own items and rank these as described above.

1. Checklists
2. Safety Inspections
3. Safety Agencies
4. Teacher Liability
5. Safety Attitudes
6. First Aid
7. Physical Elements (equipment)
8. Industrial Safety
9. Accident Causing Conditions
10. Accident Prevention
11. Laboratory Improvement
12. Instructional Improvement
13. Safety in Demonstrations
14. Safety tests for Students
15. Accident Reporting and Analysis
16. Role of Supervisor, Principal, etc.
17. Housekeeping Practices
18. Fire Safety
19. Personal Protection
20. Special Needs Students
21. Lesson Plan on Safety
22. Other-Please List

_____

23. Other-Please List

_____

RANK ORDER NUMBER	ITEM NUMBER
1 Most Important	_____
2	_____
3	_____
4	_____
5 Fifth Most Important	_____

Please list the name, title, and address of person who will review package.

NAME: _____

TITLE: _____

ADDRESS: _____

_____

In the space below (or on the back of this sheet) please describe your program for safety education for pre-student teachers, any interest in using such a self-instructional package, or any other comments that you feel may be of assistance to my safety study for industrial education.

Let me thank you again for your prompt attention to this matter.